

**ACI-ASCE Committee 447**  
Finite Element Analysis of Reinforced Concrete Structures  
Meeting at Room CASCADE 2, Grand Sierra Resort, Reno, NV  
03/24/2014      11:00 am - 1:30 pm  
ACI Spring 2014 Convention

**1. Call to Order and Introduction of Members and Guests**

Meeting called to order at 11:00 am.

**Members present:** Brian (BJ) Siljeborg, Ashraf Ayoub, Jian Zhao, Jason Draper, Ganesh Thiagarajan (Chair), Laura Lowes, Ioannis Koutromanos, Mukti L. Das, Michael O'Leary, Y.L. Mo, Robert Esplin, Allan Bommer, and John Jakovich.

**Members absent:** Bazant, Al-Mahaidi, Cusatis, Mullapudi, Palermo, Vecchio, Coronado, Song, Guner, Panagiotou, Samarajiva, Appa Rao, Billington, Conley, Deaton, Gerstle, Ingraffea, Lin, Lu, Naguib, Rahman, Riveros, Sritharan, and Willam.

**Guests:** Dug To, Trevor Hrynyk, Mahamed Moustafa, Michael Brown, Murat Engindentz, Atls Liepins, Jayieu Arnez, Andy Taylor (TAC Rep.), Ian McFarlane, Ayman Okeil, Khalid Nahlawi, and Alan Wiley.

**2. Excused absences**

none

**3. Review and approve minutes from previous meeting: ACI Fall 2013 Phoenix convention.**

Motion to approve the minutes for ACI Fall 2013 Phoenix convention. (Zhao, Allan)  
The motion passed unanimously.

**4. Membership update**

The Chair will review the existing voting members.

**5. Report on possible technical sessions/Special Publications to be sponsored by the committee:**

- a. **Cusatis:** "Development of guidelines for the calibration and validation of concrete models," Session in Collaboration with ACI-446 on Calibration of Concrete Models. (In Abeyance)

Not discussed due to the absence of Cusatis

- b. **Special Publication** – Based Fall 2014 Session on 'Blast Blind Prediction Contest cosponsored by 370 (Ganesh).

Ganesh reported the progress of the special publication. Nine papers have been collected. The committee members will be asked to review draft papers.

- c. **Future sessions to be organized**

- Das will propose a session on "Design of shear walls in nuclear structures." Proposals due on June 11, 2014.
- Zhao and Chen from 408 committee are in the progress of finalizing the session request on "Advancement in Modeling Bond of Deformed Bars."
- O'Leary and Coronado will propose a session on the outcome of NESCC-concrete

Task Group report on Post-processing Finite Element Analysis Results for the design of Nuclear Concrete Structures (447.YT)

## 6. Update on State-of-the-Art Reports

- a. **Ayoub:** Modeling of modern Concrete Structures for Performance-Based Earthquake Engineering (447.XR) – Discussion of results of the Ballot.

The committee discussed the ballot results. All five negative ballots were discussed, and recommendations made to improve the document. The committee recommended these changes:

- 1) Chapter 3 may include comments on the available models.
- 2) Chapter 4 may include additional examples that use the models included in Chapter 3.

- b. **Sritharan and Zhao:** State-of-the-art report on modeling bond in reinforced concrete (447.YR)

Zhao reported the progress on the report.

- c. **Al-Mahaidi:** Modeling for the Repair and Rehabilitation of Modern Concrete Structures for Performance Based Design (447.ZR)

The discussion is tabled due to the absence of Al-Mahaidi.

- d. **NESCC – Concrete Task Group (CTG) Report:** Post-Processing Finite Element Analysis Results for the Design of Nuclear Concrete Structures (447.YT)

O'Leary updated the committee on the document. A complete draft is likely ready by Fall 2015.

## 7. Twisting Moments in Finite Element Based Design of Reinforced Concrete Slabs (Allan Bommer)

Bommer updated the committee on the document. The document was converted into to a design guide (from the original tech notes). The concept has been approved by TAC. A complete draft is likely ready by Fall 2014 convention.

## 8. **Dr. Mukti Das:** "Correct Interpretation of Design Stress Resultants from Software"

Dr. Das gave a presentation on how to properly interpolate the results of finite element analyses.

## 9. **Brief introduction by Dr. Ioannis Koutromanos** of his research work on nonlinear truss modeling of shear-dominated RC columns subjected to seismic loading.

Dr. Koutromanos presented a nonlinear truss model for capturing the behavior of RC columns controlled by brittle shear failure.

## 10. New Business/ Adjourn

No new business.

**Meeting adjourned at 1:30 pm.**